

REFERENCES

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6. IMPACT OF CYCLONE ON THE RODENT POPULATION IN ANDHRA PRADESH

It is of interest to know about the survival and changes in number of rodents during catastrophes like cyclones. Hence a detailed (Post cyclone) survey of rodent pests in 153 hectares was conducted in Bapatla taluk of Andhra Pradesh immediately after the 1977 severe cyclonic storm which had the intensity of a hurricane and data were compared with pre-cyclone survey made in February, 1977. The areas surveyed were around four villages, Adivi, Ganapavaram, Karlapalem and Maruproluvandlapalem in addition to Bapatla. In these surveys the burrows of different species of rodents were identified and counted by live burrow counting (Barnett, S. A. and Prakash, I., 1975, Rodents of economic importance in

India, Arnold Heineman, New Delhi). Some live burrows were excavated and the number, the litter size and breeding state of the individuals were recorded.

The infestation of rodents was maximum in paddy (*Oryza sativa*) fields followed by bajra (*Pennisetum americana*) and ragi (*Eleusine coracana*). The number of burrows of *Mus* species (*Mus booduga* and *Mus platythrix*) was more followed by *Bandicota bengalensis* and *Rattus rattus* in the agroecosystems (Table 1). The post cyclonic survey indicated an enhancement in the number of burrows. The litter size in the post cyclonic rodent population was also more ($P < 0.001$ in *B. bengalensis*. $P < 0.05$ in embryo count and $P < 0.001$

TABLE 1

DISTRIBUTION OF RODENT BURROWS IN DIFFERENT CROPS AROUND BAPATLA DURING PRE-AND POST-CYCLONE PERIODS

Name of the crop	No. of hectares	Period	Total No. of burrows	Burrows per hectare			
				<i>Mus</i> * sp.	<i>B. bengalensis</i>	<i>R. rattus</i>	<i>T. indica</i>
Paddy (<i>Oryza sativa</i>)	50	Pre cyclonic	375	4.0	2.0	1.5	—
		Post cyclonic	750	7.0	5.0	3.0	—
Bajra (<i>Pennisetum americana</i>)	25	Pre cyclonic	112	3.0	1.0	0.5	—
		Post cyclonic	180	5.4	1.0	0.8	—
Ragi (<i>Eleusine coracana</i>)	28	Pre cyclonic	84	0.5	2.0	0.5	—
		Post cyclonic	70	0.5	1.0	1.0	—
Uncultivated fields	50	Pre cyclonic	10	—	—	—	0.2
		Post cyclonic	40	0.5	—	—	0.3

* *Mus booduga* and *Mus Platythrix*.

MISCELLANEOUS NOTES

TABLE 2

DISTRIBUTION OF LITTER SIZE AMONG DIFFERENT RODENT SPECIES AROUND BAPATALA DURING PRE- AND POST-CYCLONE PERIODS

Rodent species	Sample size	Embryo count				Field collection			
		Pre cyclonic		Post cyclonic		Pre cyclonic		Post cyclonic	
		Range	Mean	Range	Mean	Range	Mean	Range	Mean
<i>Bandicota bengalensis</i>	15	2-5	2.8 ±1.5	1-7	4.5 ±2.0	1-4	1.50 ±1.0	1-4	2.5 ±0.75
<i>Mus</i> sp.	10	1-8	3.5 ±1.5	2-10	5.5 ±2.5	1-5	1.5 ±0.75	2-5	3.5 ±1.0
<i>Rattus rattus</i>	10	1-6	2.5 ±1.2	1-7	2.5 ±1.0	—	—	—	—
<i>Tatera indica</i>	5	1-5	2.5 ±1.0	1-5	3.5 ±1.0	—	—	—	—

* *Mus hooduga* and *Mus Platythrix*.

in the field collections of *Mus* species). It was not significant statistically in *Tatera indica* and *R. rattus* (Table 2). In both the periods *Mus* had more number of litters followed by *B. bengalensis* and *R. rattus* in the fields. *T. indica* was seen only in unirrigated dry fields at all times.

The enhancement of rodent numbers may be due to the greater availability of good quality food from the crops scattered by the cyclone. Similar vegetation conditions during both the surveys ruled out the effect of season on the rodent number. The reduced competition due to flooding of burrows of field rodents

may be another responsible factor. Migration by swimming may also account for the increase in the live burrows of rodents in the survey areas. However it is unlikely to be a factor in the present case since a vast stretch of land was flooded. The higher incidence of *Mus* after the cyclone may be due to their habitat diversity in both dry and wet areas.

In the absence of any other factor as responsible for the increased rodent numbers, the food destroyed by the cyclonic water, and rendered unfit for human consumption, might have triggered the increased reproduction, thereby, resulting in high numbers.

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